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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,514	01/04/2007	Marlene Mueller	10460.204-US	2963

25908 7590 02/27/2009

NOVOZYMES NORTH AMERICA, INC.
500 FIFTH AVENUE
SUITE 1600
NEW YORK, NY 10110

EXAMINER	
GOUGH, TIFFANY MAUREEN	

ART UNIT	PAPER NUMBER
1657	

MAIL DATE	DELIVERY MODE
02/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,514	MUELLER, MARLENE	
	Examiner	Art Unit	
	TIFFANY M. GOUGH	1657	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2009*.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-37* is/are pending in the application.

4a) Of the above claim(s) *36 and 37* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/23/2006,1/12/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 20-35 in the reply filed on 1/5/2009 is acknowledged.

Claims 36,37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

Claims 20-37 are pending. Claims 20-35 have been considered on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claims 24 and 25 claim milling the starch material for a specific time period, these claims introduce new matter, which is not described in the specification as originally filed. Applicant discloses on p.4, lines 20-24 of the specification that if the starch material which is liquefied is prepared by dry or wet milling, the *saccharification* may be carried out for between 1-16 hours or 5-30 hours respectively. There is no support for milling for the claimed time periods as claimed in claims 24 and 25 with regards to applicant's invention. Therefore, claims 24

and 25 changes the scope of the claims and applicants invention for which no support is provided. This is a new matter rejection.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20, 21, 33 and dependent claims 22-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 20 is indefinite in that it is not clear whether or not the actual process is carried out at the claimed temperature, pH and time period or if it is the *polypeptide* which has glucoamylase activity at the claimed temperature, pH and time period. For purposes of examination it has been interpreted as characteristics of the process, not the polypeptide.

Claim 21 is indefinite in that it claims a pH at *between above* 5.5 and 6.2. It is unclear at what pH the process is carried out. Applicant has claimed a range of 5.5-6.2; therefore it is not clear *above* which pH the process is carried out.

Claim 33 contains the abbreviation DS. It is not clear what DS stands for. Abbreviations should first be spelled out then followed with an abbreviation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 2-24, 26-35 are rejected under 35 U.S.C. 102 (e) as being anticipated by Bisgaard-Frantzen et al. (US 2004/0023349 A1).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Bisgaard-Frantzen teach a process of enzymatic saccharification wherein an alpha-amylast liquefied starch product (0030-0034) is treated with a polypeptide having glucoamylase activity (0017, 00370-0040) at temperatures between 50-80 for 0.5-36 hours at a pH from 5.5-6.2 (0017, 0055-56). The polypeptide is added in an amount of 0.01-0.5 AGU/g DS (0040). The saccharificaiton product is prepared by dry milling of whole grains (0015). The saccharification step is followed by a yeast fermentation step (0018-0019).

Thus, the reference anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 20-35 are rejected under 35 U.S.C. 103(a) as being obvious over the combination of each of Veit et al. (US 2004/0091983 A1) or Veit et al. (WO 02/38787 A2) or Olsen et al. (WO 02/074895 A2) or Olsen et al. (US 2004/0115779 A1) or Veit (US 20020006647 A1) in view of Nielsen et al (6255084).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Applicant claims a method of enzymatic saccarification or pre-saccharification wherein the starch containing material is treated with a polypeptide at a pH from 5.5-6.2 at a temperature of 50-80°C for 0.5-36 hours. The polypeptide may be an alpha-amylase or glucoamylase from a fungal organism. Applicant also claims the saccharification step to be followed by yeast fermentation.

The references teach method of enzymatic saccarification or pre-saccharification wherein the starch containing material is treated with a polypeptide at a temperature of 50-80℃ for 0.5-36 hours. The polypeptide may be an alpha-amylase or glucoamylase from a fungal organism. They also teach the saccharification step to be followed by yeast fermentation.

The references do not teach saccharification or pre-saccharification at a pH from 5.5-6.2.

Nielsen et al (6255084) teach thermostable glucoamylases from Talaromyces emersonii used for starch conversion, i.e. saccharification processes (abstract, col. 4, lines 10-12) at temperatures from 60-80℃ and a pH of 5.5 (col. 7, lines 10-22).

At the time of the claimed invention, it would have been obvious to one of ordinary skill in the art to use the glucoamylase of Nielsen in a saccharification method such as those taught by Veit and Olsen because Nielsen teach their glucoamylase to be active at higher temperatures and pH than that of most commercially used glucoamylases (col. 1, lines 44-53, col. 7, lines 5-40) and requires a lesser amount of glucoamylase to be used due to its thermostability.

Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to have used a glucoamylase such as that taught by Nielsen with a reasonable expectation for successfully carrying out a saccharificaiton process because Nielsen teach the use of a glucoamylase in a saccharification process.

They teach their glucoamylase to be active at higher temperatures and pH than that of most commercially used glucoamylases (col. 1, lines 44-53, col. 7, lines 5-40) and requires a less amount of glucoamylase to be used due to its thermostability.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 20, 22, 23, 30-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19-24 of U.S. Patent No. 6255084. Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of both sets of claims are the same, i.e. drawn to a saccahrification process comprising the use of a glucoamylase at temperatures ranging from 60-80 at a pH of 5.5 for 24-26 hours .

Claims 20-23,27,29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 33,38,52 of copending Application No. 11/814,304 Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of both sets of claims are the same, i.e. drawn to a saccahrification process comprising the use of a glucoamylase at temperatures ranging from 60-70C at a pH of 5.5-6 for 0.5-1.5 hours .

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

NO claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIFFANY M. GOUGH whose telephone number is (571)272-0697. The examiner can normally be reached on M-F 8-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ralph Gitomer/
Primary Examiner, Art Unit 1657

/Tiffany M Gough/
Examiner, Art Unit 1657